REMARKS

Status of the Application

Claims 1-13 stand rejected on prior art grounds. Claims 4, 6, 8, 9, and 11-13 are hereby

canceled without prejudice or disclaimer. Hence, claims 1-3, 5, 7, and 10 are all the claims

pending in the application.

Preliminary Matters

Applicants thank the Examiner for accepting the drawings.

Claim Rejections - 35 U.S.C. § 103(a)

The Examiner has rejected claims 1, 2, 4-8, and 11-13 under 35 U.S.C. § 103(a) as

allegedly being unpatentable over U.S. Patent No. 6,253,185 to Arean (hereinafter "Arean") in

view of U.S. Patent No. 5,654,952 to Suzuki et al. (hereinafter "Suzuki"). The Examiner has

rejected claims 3 and 9 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Arean in

view Suzuki and further in view of U.S. Patent No. 6,456,963 to Araki (hereinafter "Araki").

The Examiner has rejected claims 3 and 9 under 35 U.S.C. § 103(a) as allegedly being

unpatentable over Arean in view Suzuki and further in view of U.S. Patent No. 5,241,603 to

Akagiri (hereinafter "Akagiri"). The Examiner has rejected claim 10 under 35 U.S.C. § 103(a)

as allegedly being unpatentable over Arean in view Suzuki and further in view of U.S. Patent

No. 5,559,900 to Jayant et al. (hereinafter "Jayant"). Applicants submit that the claims are

patentable.

In the Amendment filed August 1, 2007, Applicants argued that Arean and Suzuki, alone

or in combination, do not teach or suggest a masking threshold calculator which approximates an

energy distribution curve to a distribution pattern of noise threshold levels calculated by a

psychoacoustic model, as required by claim 1. Applicants also argued that Arean and Suzuki do not teach or suggest a quantization noise curve adjuster that matches a quantization noise curve to the approximated energy distribution curve, as required by claim 1.

In response, the Examiner contends that Arean's processing of noise and signal data to produce an output with a proper amount of noise corresponds to the claimed operation of approximating an energy distribution curve to a distribution pattern of noise threshold levels (page 2 of the Office Action). The Examiner also contends that Arean's repeating of this noise data adjustment process corresponds to the claimed matching operation. In support of this contention, the Examiner asserts that a process of matching is equivalent to finding an amount of allowable noise suitable for an output signal.

However, the Examiner's allegation that Arean's same repeated process of noise data adjustment corresponds to both the claimed approximating operation and the claimed matching operation relies on the incorrect assertion that the claimed pattern of noise threshold levels and the claimed quantization noise curve are equivalent to one another (page 2 of the Office Action). Claim 1 recites that the distribution pattern of noise thresholds is used to approximate the energy distribution curve, while the quantization noise curve is matched to the approximated energy distribution curve. The distribution pattern of noise thresholds cannot be equivalent to the quantization noise curve, as asserted by the Examiner, because one is used to determine the energy distribution curve, while the other is determined therefrom. Thus, Applicants submit that the claim language precludes the Examiner from making such an assertion.

In the Amendment filed August 1, 2007, Applicants also argued that Arean and Suzuki, alone or in combination, do not teach or suggest that the quantization noise curve adjuster adjusts a common gain to meet a target bit rate. In response, the Examiner asserts that Arean's process

of rescaling quantized coefficients separated into factor bands is a parametric equalization operation which has the ability to control gain with respect to each frequency band (page 2-3 of the Office Action). However, Arean teaches that quantization step sizes are adjusted *within each factor band* to meet noise level requirements (col. 12, lines 21-25). Therefore, the gain of each factor band is adjusted *individually*. Thus, Arean does not teach or suggest a quantization noise curve adjuster that adjusts a *common* gain while *fixing* the scalefactor band gain for each frequency band, as required by claim 1. Suzuki does not cure this deficiency.

Moreover, claim 1 recites that the masking threshold calculator includes a quantization noise curve pattern estimator which adjusts quantization noise distribution by relatively adjusting a gain for each frequency band based on the calculated energy distribution curve and a bit adjustment initial value setter that determines the scalefactor band gain in such a way as to use more bits than the target bit rate. Thus, the claimed approximation performed by the masking threshold calculator is different one from Arean's quantization which uses the complex calculation of the perceptual model 106.

For all of the foregoing reasons, Applicants submit that claim 1 is patentable and respectfully request withdrawal of the rejection. Because claims 2, 3, and 5 are dependent on claim 1, Applicants submit that claims 2, 3, and 5, are patentable at least by virtue of their dependency.

Independent claim 7 recites features similar to those discussed above in conjunction with claim 1. Thus, Applicants submit that claim 7 is patentable at least for reasons analogous with those discussed above regarding claim 1. Applicants also submit that claim 7 is patentable at least for the following additional reasons.

For example, claim 7 recites that if a signal in one of adjacent frequency bands has an energy level greater than that of a signal in a particular frequency band, the energy level of the signal in the particular band is increased by a predetermined ratio with respect to a difference with the greater energy level in the adjacent frequency band. On page 8 of the Office Action, the Examiner asserts that "Akaragi discloses a means for setting ...... based on the energies of signals *temporally* adjacent to the signals ......" Thus, the setting of noise level is performed in the *time* region, and does not teach or suggest the claimed increasing of the energy level in a particular band performed in the *frequency* regions.

In view of the foregoing, Applicants submit that claim 7 is patentable. Because claim 10 is dependent on claim 7, and because Jayant does not cure the deficiencies of Arean and Suzuki, Applicants also submit that claim 10 is patentable.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue

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Respectfully submitted,
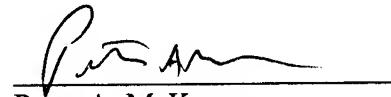
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23373
CUSTOMER NUMBER

Date: November 26, 2007